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(Continued on next card)

AFANAS' YEVA, A.L.... (continued) Card 2.

NIKIFOROV, P.Ye., kand.sel'skokhozyaystvennykh nauk; NENASHEV, N.I.,
 lesovod; PERYUSHINA, A.N., agronom; PLOTHIKOV, N.A., kand.biol.nauk;
 L.G.; kand.sel'skokhozyaystvennykh nauk; PAVLOV, V.D., kand.tekhn.
 nauk; PRUTSKOVA, M.G., kand.sel'skokhozyaystvennykh nauk; GURCHENKO,
 V.S., agronom; POPOVA, G.I., kand. sel'skokhozyaystvennykh nauk;
 PORTYANKO, A.F., agronom; RUCHKIN, V.N., prof.; RUSHEVSKIY, T.V.,
 agronom; SAVITSKIY, M.S., kand.sel'skokhozyaystvennykh nauk; BOLDIN,
 D.T., agronom; NESTEROVA, A.V., agronom; SERAFIMOVICH, L.B., kand.
 tekhn.nauk; SMIRNOV, I.N., kand.sel'skokhozyaystvennykh nauk;
 SEREBRYANSKAYA, P.I., kand.tekhn.nauk; TOKHTUYEV, A.V., kand. sel'sko-
 khozyaystvennykh nauk; YAL'KO, O.S., izn.; PEDIYUSHIN, A.V., doktor
 biol.nauk; SHEVLYAGIN, A.I., kand.sel'skokhozyaystvennykh nauk;
~~YUZHEBOV, V.A., kand.sel'skokhozyaystvennykh nauk;~~ YAKHTENFEL'D, P.A.,
 kand.sel'skokhozyaystvennykh nauk; SEMEHOVSKIY, A.A., red.; GOR'KOVA,
 Z.D., tekhn.red.

[Handbook for Siberian agriculturists] Spravochnaya kniga agronoma
 Sibiri. Moskva, Gos. izd-vo sel'khoz. lit-ry. Vol.1. 1957. 964 p.
 (Siberia--Agriculture) (MIRA 11:2)

DENISOV, Pavel Stepanovich, kand. sel'khoz. nauk; MAMONOV, Nikolay
Nikolayevich, kand. sel'khoz. nauk; YUFEROV, Vasily
Aleksseyevich, kand. sel'khoz. nauk; BORODKINA, L.A., red.;
LEVINA, L.G., tekhn. red.

[What are the advantages of green fallowing] Chto dait za-
niatye pary. Moskva, Rossel'khozizdat, 1963. 69 p.
(MIRA 17:3)

YUFEROV, Vasilii Aleksandrovich, kand. sel'khoz. nauk, st. nauchn.
sotr.; FEDOROVA, Yu.A., red.

[Subsurface tillage] Bezotval'naya obrabotka pochvy. Mo-
skva, Rossel'khozizdat, 1965. 85 p. (MIRA 19:1)

1. Sibirskiy nauchno-issledovatel'skiy institut sel'skogo
khozyaystva (for Yuferov).

ACCESSION NR: AT4036071

S/2781/63/000/003/0283/0294

AUTHORS: Borovik, Ye. S.; Busol, F. I.; Yuferov, V. B.; Skibenko, Ye. I.

TITLE: Investigation of supersonic jet of carbon dioxide as a target for charge exchange of ions

SOURCE: Konferentsiya po fizike plazmy* i problemam upravlyayemogo termoyadernogo sinteza. 3d, Kharkov, 1962. Fizika plazmy* i problemy* upravlyayemogo termoyadernogo sinteza (Plasma physics and problems of controlled thermonuclear synthesis); doklady* konferentsii, no. 3. Kiev, Izd-vo AN UkrSSR, 1963, 283-294

TOPIC TAGS: supersonic gas flow, gas jet, charge exchange, magnetic trap, cryogenic treatment, carbon dioxide, condensation

ABSTRACT: The described investigation is one of the stages of research done by the authors to develop a hydrogen-cooled magnetic

Cord 1/5

ACCESSION NR: AT4036071

trap and produce intense beams of fast neutral hydrogen or deuterium atoms. On the basis of cryogenic methods developed at the author's institute, it is proposed to use as charge-exchange targets supersonic jets of gases such as CO_2 , N_2 , O_2 , Ar, and H_2 flowing in vacuum and completely condensed on a cooled surface (78K). The experiments reported were made with carbon dioxide. The main parameters of a supersonic jet of this gas are first derived, after which the experimental setup, the test procedures, and the results are described. The investigations give grounds for assuming that in spite of the fact that the gas was not fully condensed and that an inverse flux of CO_2 molecules was observed, the use of carbon dioxide as a charge-exchange medium is feasible particularly if the purity of the gas and the pumping-on rate are increased. The possibility of the maximum amounts of carbon dioxide that can be frozen or the condenser and the possibility of constructing a closed-cycle system are also discussed. Future experiments are planned at ascertaining the possible use of other gases and deeper cooling. "The authors thank

Cord 2/5

ACCESSION NR: AT4036071

Ya. M. Fogel', D. V. Pilipenko, and S. G. Konovalov for measuring the capture cross section and electron loss of fast protons and hydrogen atoms in CO₂." Orig. art. has: 4 figures, 7 formulas, and 1 table.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 21May64

ENCL: 02

SUB CODE: ME, NP

NR REF SOV: 007

OTHER: 003

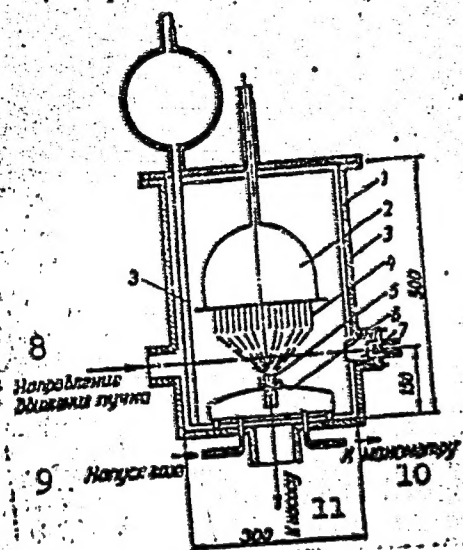
Card 3/5

ACCESSION NR: AT4036071

ENCLOSURE: 01

Diagram of charge-exchange chamber:

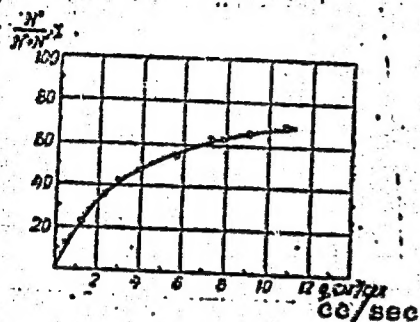
- 1 - chamber, 2 - condenser, 3 - screen,
4 - copper plates, 5 - outflow chamber,
6 - Laval nozzle, 7 - Faraday cup with
calorimeter, 8 - direction of beam motion,
9 - gas inlet, 10 - to manometer, 11 - to pump



Card 4/5

ACCESSION NR: A54036071

ENCLOSURE: 02



Yield of neutral atoms as a function of the CO_2 flow. Mixed beam of hydrogen ions, $E = 19.5 \text{ keV}$

Card 5/5

ACCESSION NR: AT4036072

S/2781/63/000/003/0294/0299

AUTHORS: Borovik, Ye. S.; Busol, F. I.; Yufarov, V. B.

TITLE: Investigation of supersonic jets of nitrogen and argon

SOURCE: Konferentsiya po fizike plazmy* i problemam upravlyayemogo termoyadernogo sinteza. 3d, Kharkov, 1962. Fizika plazmy* i problemy* upravlyayemogo termoyadernogo sinteza (Plasma physics and problems of controlled thermonuclear synthesis); doklady* konferentsii, no. 3. Kiev, Izd-vo AN UkrSSR, 1963, 294-299

TOPIC TAGS: supersonic gas flow, gas jet, charge exchange, magnetic trap, cryogenic treatment, argon, nitrogen, vacuum technique

ABSTRACT: This is a continuation of a companion paper (Accession Nr. AT4036071), except that the gases tested were argon and nitrogen, and the condenser was cooled to hydrogen temperature (20.4K). In addition, in the present setup it was possible to protect the working

Card 1/3

ACCESSION NR: AT4036072

volume of the trap against the entry of jet molecules by an "absolutely black" channel, constituting a tube cooled to low temperature. The experiment demonstrated the feasibility of the use of hydrogen cooling for the development of supersonic gas target jets, and that no additional technical problems arise in this connection; in fact, the vacuum can be improved somewhat. The experiments have also shown that tubes which are cooled with liquid hydrogen or liquid helium are practically "absolutely black" to the molecules of all gases with sufficiently low vapor tension at the corresponding temperature. It is suggested that in conjunction with effective pumping methods this method of protection will find application in thermonuclear and other devices where large pressure drops are necessary in high or superhigh vacuum. Orig. art. has: 3 figures, 2 formulas, and 1 table.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 21May64

ENCL: 01

SUB CODE: ME

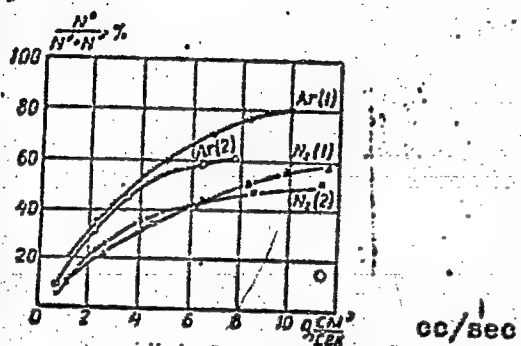
NR REF SOV: 002

OTHER: 001

Cord 2/3

ACCESSION NR: AT4036072

ENCLOSURE: 01



Yield of neutral molecules as a function of the gas flow. $E = 15$ (1) and 23.5 (2) keV

Card 3/3

L 18483-63

EPR/EPA(b)/ZWT(1)/BDS

AEDC/APFTC/ASD/APMDC

PR-4/PR-4

AUTHOR: Lorovich, Ye.S.; Dusol, F.I.; Yuforov, V.E.; Skibenko, Ye.I.

67

TITLE: Investigation of a supersonic carbon dioxide jet as a target for ionic charge exchange

SOURCE: Zhurnal tekhnicheskoy fiziki, v.33, no.3, 1953, 973-981

TOPIC TAGS: high energy neutral beam, charge exchange target, CO₂, H, hydrogen

ABSTRACT: As part of a continuing program directed toward obtaining information on the interaction of neutral hydrogen and deuterium atoms, the charge exchange cross section of a high energy proton beam and a supersonic carbon dioxide jet was investigated. The jet was produced in an arc source of the type described by J. Kistemaker and J. P. Dagher (Physica, 18, 193, 1951); it was accelerated by a three electrode static lens and emerged through a 1 mm aperture. The beam current was 100 mA and the proton energy was varied from 10 to 25 keV. After neutralization of the beam by a metal charge exchanger, the neutral beam was detected by a Faraday cup. The charge exchange cross section was measured and the fraction of neutral atoms present was determined.

Card 1/2

1 18483-63

ACCESSION NR: AP305510

The jet of purified carbon dioxide issued from a Lavale nozzle below the proton beam and was caught on a condenser cooled with liquid nitrogen above it. When the carbon dioxide flux was increased from 5 to 15 cm³/sec the pressure within the chamber rose from (1-10)10⁻⁶ to (6-10)10⁻⁵ mm Hg. This is ascribed to the condensation of carbon dioxide on the walls of the chamber. The fraction of carbon dioxide in the gas phase with increasing carbon dioxide flux, and at a fixed flux of 15 cm³/sec it reached a saturation value of 70-75%, which agrees with the theoretical value for a thick target. In conclusion, we consider it our pleasant duty to express our deep gratitude to V.I. Il'inskiy, V.I. Filipenko and L.G. Ivanov who, at our request, measured the cross section of capture and loss of carbon-14 by proton and nitrogen atoms. The results are: 10 fowvles, 4 fowvles, 1 fowvle.

ABSTRACT: none

SUBMITTED: 02Jul62

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: PH

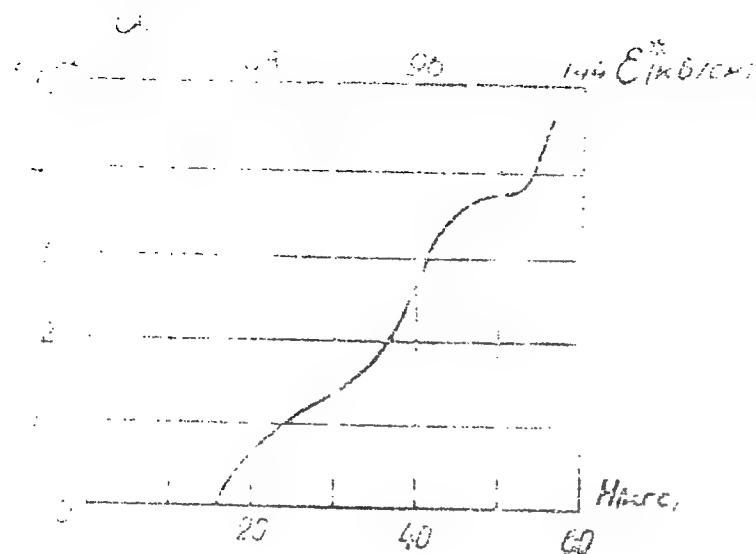
NO REF SOV: 007

OTHER: 003

Card 2/2

100-10-66

NR: 51-24,44



23817-65

ACCESSION NR: AP5000840

development of the device described in the present paper. The tests were carried out on the setup mentioned in the Enclosure. The tests were carried out on the setup mentioned studies. As before, the vacuum was measured by means of a vacuum gage located in a blind branch off the charge exchange chamber of 150 mm from the nozzle. The results of test runs with different arrangements and then with different heights of the shielding tube are

ACCESSION NR: AP8000R40

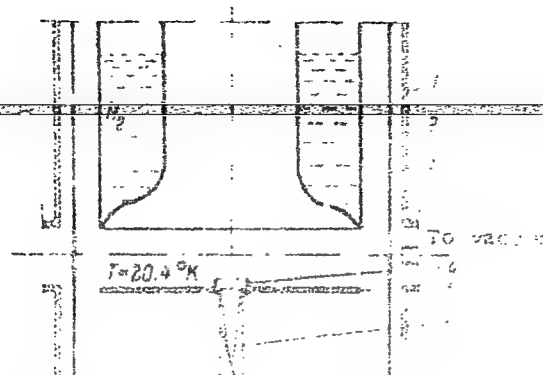


Diagram of the shielding device: 1 - chamber; 2 - ...
3 - condensing element, 4 - shielding tube; 5 - ...

3/3

L 24047-66 OCT(1) 121(1) MW/IS/AT/GW
ACC NR AT604-442 SOURCE 121

In P. Burdakov, Ye. S. Busol, I. I. Kovalenko, et al.
U.S.S.R.

ORG: none

TITLE Ionization of fast hydrogen atom in a strong

field. Ab. Kh. P. Magnitovye levitatsii (Magnetic levitations)

Abstract: In a strong magnetic field, a hydrogen atom is ionized by a fast electron, atom, fast particle.

Abstract: Data are given from pre-experiments on the ionization of a hydrogen atom with an energy of 10 eV by a fast electron with an intensity of 10¹⁰ A/cm². The results are compared with the results of the calculations of the ionization of fast atoms in a strong magnetic field. This paper contains data on the ionization of hydrogen atoms by fast electrons in a strong magnetic field. Two papers are published with the results of the calculations. The results were

1 24047-00

AJC NK AT6018842

... a battery of capacitors. The build-up time for a field of 100 gauss in the center of the gap between the plates was 0.1 sec. A reduction in the field at a radius of 1 cm from the central hydrogen atoms was produced by charge exclusion of a 100 g of carbon dioxide frozen on a surface. The exchange target was 0.9 meters from the axis of the beam. The particles ionized in the central region of the field (cm) was determined by simultaneously measuring the field atoms and the ion current through the central collector with respect to the beam and to the two other collectors.

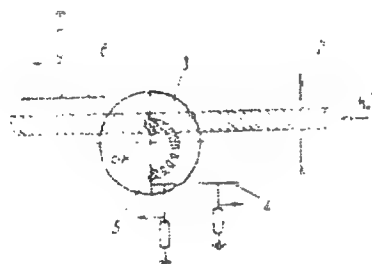


Diagram of the collector of the 1--beam of the central region on the central

that all ions formed in this region are incident on the

Card 2/3

L 24047-6r

ACC NR 176008842

central drift in the nonhomogeneous field only for the $n = 9$ states. In the case of weaker fields, some of the ions are incident on the input and output collectors and when the field is 11-15 kilogauss not one of the particles ionized can reach the central collector. A curve is given showing the ionization in the central region of the field as a function of field. Between this curve and the data in the literature on ionization for individual levels of the hydrogen atom with a given n it is shown that atoms with $n = 9$ are ionized in magnetic fields of 32 to 51 kilogauss. Ionization of atoms with $n = 8$ takes place in fields. Even in extremely strong fields, a continuous increase in H . In some experiments the current through the collector is less than could have been expected for residual gas ionization. A considerable number of hydrogen atoms may have been excited to the mean free path of several centimeters in strong magnetic fields. See also 3 figures.

SUB CODE: 20/

SUBM DATE: 20Oct65/

ORIG REF: 004/

OTH REF: 005

1 24051-66 EMT(1)/EMT(1)/ENP(m)/ENT(m)/ESC(k)-2/EPF(1)

ACC NR AT6008849 ISF(c) JD/WW/GS/AT/CS SOURCE CODE: UF

Yuferev, V. B.; Kovalenko, V. A.; Skibenko, Ye

none

A supersonic hydrogen jet in a vacuum

7.7

AW UkrSSR. Magnitnyye Iovushki (Magnetic) 11-115

supersonic flow, hydrogen plasma, cryogenic, vacuum

ABSTRACT Experiments are conducted on the use of trigger for a supersonic jet of hydrogen on the basis of the supersonic gas jets of CO_2 . An advantage is noted from a technical standpoint since the surface on which the jet is directed is not heated. Preliminary experiments have shown that the jet is stable even when the thermal loads are high. The wall is sufficient for hydrodynamic target thickness. The flow rate is 45-50 cm³/sec. A curve is given showing the jet velocity as a function of the hydrogen flow.

001 1/2

24051-65

ACC NR AT6008849

hydrogen jet is more than an order of magnitude higher than
oxide and argon jets. Special measurements showed that there is
considerable temperature drop between the liquid helium and
ser. The experimental data show that a supersonic hydrogen
exchange of intense ion beams in installations where a hot
jection of fast neutral hydrogen or deuterium atoms. Orig

SUB CODE: 20/ SUBM DATE: 20Oct65/ ORIG REF: 20

Card 2/2 ada

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

425 20-44

... between liquid helium and the walls of its container at 4.2°K will be discussed in a later paper. In the present paper, the results of the measurements of the thermal conductivity of liquid helium at 4.2°K are presented.

REVISED: 2, 2 196

12. 11. 1941

48 FEB 24 1963

OTHER: 001

Card 212

1. 10/15/85 SWT:1/ 10/15/85

ACC NR: AT-20591

SOURCE CODE

AUTHOR: Borovik, Ye. S., Buzai, P. I., Kovalenko, V. I.,
Ye. I.

ORG: none

TITLE: Magnetic trap with a strong magnetic field

SOURCE: Konferentsiya po fizike plazmy i problemam
sintetiz. 4th, Kharkov, 1983. Fizika plazmy i problemam
sintetiz (Physics of plasma and problems of controlled
doklady konferentsii, no. 4 Kiev, Naukova dumka, 1983.

TOPIC TAGS: strong magnetic field, magnetic trap,
gen. liquid hydrogen, magnetic mirror, charge exchange

ABSTRACT: The design of the magnetic trap is described. This work is similar to that of [1] but by injection of neutral hydrogen atoms. The features of charge exchange cell and its properties are described. The magnetic fields necessary in this system are

Card 1/2

L 18838-66
ACC NR: A75028591

which is described in this work. Magnetic fields were attained by cooling multilayers (≈ 80 turns/cm). Two-stage cooling with liquid nitrogen and liquid helium made it possible to energize the coils twice at the same construction are described in detail. The inductance was determined to be 0.8 h and 0.2 ohm at low temperatures with variable separation along their axis can be used to provide the necessary vacuum conditions. Orig. art. has

SUB CODE: 20/ SUBM DATE: 20May65/ ORIG REF: 111

Card 2/2 vmb

L 21755-66 ENT(r)/T/ENP(t) LUP(z) JD/WW/JH/DE
ACC NR AP5004894 SOURCE CODE: UR

Author: Babel, F.I., Yuferev, V.B.

Institute: Physicochemical Institute, AN UkrSSR, Kharkov (Ukr.)
Classification:

Title: A new method for pumping out hydrogen

Source: Zhurnal tekhnicheskoy fiziki, v. 36, no. 1, 1966

Subject: vacuum pump, hydrogen, carbon dioxide, absorption

It has been found that carbon dioxide is efficiently absorbed in hydrogen and in the present paper their properties are investigated. A 22.5 cm diameter spherical vessel had been pumped down and cooled to 20.4°K. The concentration of H_2 in the gas phase was measured. The equilibrium pressure of H_2 in the condensed carbon dioxide was measured. The concentration of H_2 in the gas phase was measured at the equilibrium pressure at 20.4°K.

Card 1/2

I 21755-66

ACC NR 41000-01

was 4.5% the equilibrium pressure was 1.2×10^{-6} mm Hg. It increased rapidly with decreasing temperature, and at a temperature of 14°K it was 5×10^{-7} mm Hg. The rate of CO₂ effusion was about 20 liter/sec at low pressures. Diffusion of the absorbed hydrogen in the condensed layer when the CO₂ layer was 0-8 microns thick equilibrium. Condensed layers of alcohol, benzene, and acetone were not as efficient as carbon dioxide, condensed layers evinced little pumping action. (Orig. art. has. 3 figures)

SUB CODE: 20/

SUBM DATE: 15Mar65/

ORR: 13

Cord 2/2

L 47037-66 EWT(1)/EWT(m)/ENP(t)/ETI IJP(c) AT/JD

ACC NR: AP6029801

SOURCE CODE: UR/0089/66/021/002/0130/0131

AUTHOR: Borovik, Ye. S. (deceased); Busol, F. I.; Glasov, B. V.; Kovalenko, V. A.; Skibenko, Ye. I.; Yuferov, V. B.

ORG: none

TITLE: VGL-2 cryogenic magnetic trap

SOURCE: Atomnaya energiya, v. 21, no. 2, 1966, 130-131

TOPIC TAGS: ^{MAGNETIC TRAP DEVICE,} magnetic trap, hydrogen plasma, deuterium, plasma heating, plasma injection, cryogenic liquid cooling/VGL-2 magnetic trap ^{DEVICE.}

ABSTRACT: Since one of the means of producing a hot plasma is to inject intense beams of fast neutral hydrogen or deuterium atoms into a magnetic field, where they can be ionized, the authors describe the processes accompanying the filling of a small magnetic trap in which a strong magnetic field is produced. (Fig. 1) The trap differs from earlier designs in that the strong magnetic field up to (105 kG) is produced by a copper coil cooled with liquid nitrogen, which is also used to cool the outside of the vacuum chamber and thus permits a vacuum as low as $\sim 5 \times 10^{-10}$ Torr to be maintained in it. An Ardenne type source is used for the hydrogen-ion beam, the charge exchange being in a supersonic CO₂ stream condensed on a surface cooled to 20.4K. The fraction of the neutral beam ionized in the wording region of the chamber

Card 1/3

UDC: 533.9

L 47037-66

ACC NR: AP6029801

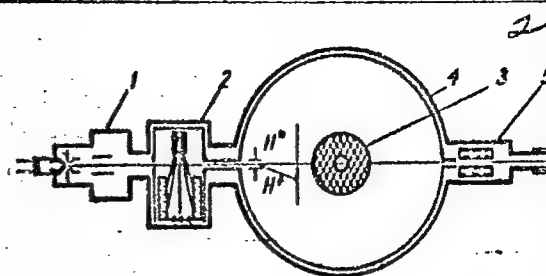
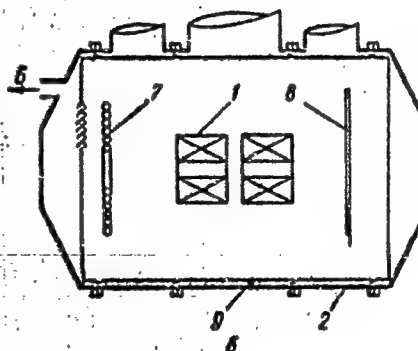


Fig. 1. Diagram of VGL-2 trap. a - section along beam axis, b - along field axis; 1 - ion source, 2 - charge exchange chamber, 3 - magnetic system, 4 - vacuum jacket, 5 - beam inlet, 6 - to pump, 7 - helium condensation pump, 8 - hydrogen pump, 9 - nitrogen screen



Card 2/3

ACC NR: AP6036036

SOURCE CODE: UR/0057/68/036/011/2042/2050

AUTHOR: Yufarov, V.B.; Busol, P.I.

ORG: none

TITLE: Investigation of the sorption of hydrogen and neon on solidified gases

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 11, 1966, 2042-2050

TOPIC TAGS: sorption, hydrogen, neon, solid state, gas, carbon dioxide, alcohol, benzene, water, nitrogen, argon, high vacuum pump, absorption pump

ABSTRACT: This paper is devoted mainly to an experimental investigation of the sorption of hydrogen on solid carbon dioxide at temperatures from 14 to 20° K. The sorption of hydrogen and neon on carbon dioxide, alcohol, benzene, water, nitrogen, and argon was also investigated. The sorbent was condensed on the surface of a 22.5 cm diameter copper sphere cooled with liquid hydrogen and mounted within a 100 liter vacuum chamber. In some of the experiments the working volume of the chamber was shielded from the walls by a surface cooled to 78° K. When the shield was employed a limiting vacuum of 2×10^{-9} torr could sometimes be achieved. The sorbent was admitted in gaseous form and condensed on the cold sphere before the shield was cooled. Measured quantities of the sorbate were subsequently admitted and the consequent pressure changes were observed with Pirani and ionization gages. The quantity of sorbed hydrogen at a given temperature and pressure was found to be proportional to

Card 1/2

UDC: 537.625; 541.183

ACC NR: AP6036036

the quantity of carbon dioxide sorbent. Sorption isosteres were recorded and sorption isotherms were calculated from them. The isotherms were similar in shape to Langmuir isotherms for monomolecular adsorption but correspond to large areas of the sorbent. It is concluded that at saturation (not reached in the experiments) there is one molecule of hydrogen for every two or three molecules of carbon dioxide. The heat of sorption of hydrogen on condensed carbon dioxide was 1400 cal/mole at a sorbed hydrogen concentration of 0.4 mole percent and decreased to 700 cal/mole at a concentration of 11.5 mole percent. The heat of sorption of neon on carbon dioxide was somewhat lower than that of hydrogen. Of the other sorbents investigated, those with complex polyatomic molecules were also efficient sorbents, and nitrogen and argon were not. Pumping speeds and sticking probabilities were obtained from the observed rates of pressure decrease. The maximum sticking probability of hydrogen on carbon dioxide at 14° K was 0.45, and the sticking probability decreased very slowly with increasing concentration of sorbed hydrogen. On carbon dioxide at 20.4° K the maximum sticking probability was 0.42 for hydrogen and 0.1 for neon. It is concluded that the investigated sorption process is physical in nature and that the hydrogen and neon are sorbed on the same centers, the difference between their sorption isotherms being due only to the difference between their heats of sorption. The authors will discuss in another paper the application of the investigated sorption process to pumping of hydrogen and neon in ultrahigh vacuum systems. The authors thank Ye.S. Borovik for discussions and for advice concerning the preparation of the paper. Orig.art. has: 7 formulas and 7 figures.

SUB CODE: 20/ SUBM DATE: 15Nov65/ ORIG.REF: 005/ OTH REF: 002

Card 2/2

ACCESSION NR: AR40111147

S/0137/63/000/012/D037/D037

SOURCE: RZh. Metallurgiya, Abs. 12D224

AUTHOR: Rogov, M. B.; Yuferov, V. M.; Goncharov, I. A.; Lagutina, R. V.;
Prikhodchenko, G. M.; Pechennikova, I. S.; Prudkova, R. A.

TITLE: Experience in making cold-rolled pipes from EP38, EP39, and EP40
ferritic-martensitic steels

CITED SOURCE: Sb. Proiz-vo trub. M., Metallurgizdat, vy*p. 9, 1963, 1-47

TOPIC TAGS: Ferritic martensitic steel, steel pipe cold rolling, steel pipe
cold drawing

TRANSLATION: The following conclusions were reached on the basis of industrial
experience in producing the indicated pipes: (1) In order to obtain a high-
quality surface of cold-rolled and cold-drawn pipes with a wall thickness
made from EP38 and EP39 steel, the tube blanks should be turned and drawn.
Turning of blanks from EP38 and EP39 steel for tubes with a wall thickness of

Card 1/2

ACCESSION NR: AR4014447

1 mm can be replaced by the usual repair by means of files. (2) The heat treatment of hot-rolled pipes from EP38, EP39, and EI993 steel should be carried out by annealing prior to cold deformation. A. Leont'yev.

DATE ACQ: 09Jan64

SUB CODE: ML

ENCL: 00

Card 2/2

OSTRENKO, V.Ya.; YUFEROV, V.M.; GEYKO, I.K.; TYR, V.R.; OSLOV, N.A.;
CHEMERINSKAYA, R.T.; VIL'YAMS, O.S.; LAGUTINA, R.V.

Pipe production from new heat-resistant ferritic-martensitic
steels. Stal' 23 no. 3:258-263 Mr '64. (MIRA 17:5)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut,
Pervoural'skiy novotrubnyy zavod i Nikopol'skiy yuzhnotrubnyy
zavod.

1. YUFEROV, Eng. V.M.
2. USSR (600)
4. Saws
7. Technology of production and quality of saws. Les. prem. 12 no. 12; 1952
9. Monthly List of Russian Accessions. Library of Congress, March 1953. Unclassified.

YUFEROV, V. M.

Tempering

Hardening of the teeth of band saws.,
Stan., 1 instr., 23, no. 4, 1952

Monthly List of Russian Accessions, Library of Congress, November 1952, UNCLASSIFIED

YUFEROV, V. M.

Dissertation : --"Thermic Processing of Steel Strips for Saw Manufacture." Cand
Tech Sci, Gor'kiy Polytechnic Inst, Gor'kiy 1953.

W-30928

SO: Referativnyy Zhurnal, No. 5, Dec. 1953, Moscow, AN USSR (1953)

1.1-feres 10/11

1347. Rapid analysis of benzene
method of measurement of benzene
Yuliyev, M. P. Kozlov, V. A. Kozlov
Kuznetsov and I. I. Shapovalov
Mikhailovskiy Inst. Kuznetsov
(6), 167-101. For use of a theme
for determining C in steel under
is discussed.

MOLOTKOV, L.F.; YUFEROV, V.M.; KRIZHANOVSKIY, A.L.; SHAFRAN, I.K.;
BORTUNOV, Ye.M.; SOROCHAN, N.G.; MADZHAR, N.I.; VOROB'YEV, A.F.

Investigating pressures during the rolling of universal strips.
Izv.vys.ucheb.zav.; Chern.met. 5 no.4:76-81 '62. (MIRA 15:5)

1. Dneprodzerzhinskiy metallurgicheskiy institut i Zavod im.
F.E.Dzerzhinskogo.

(Rolling (Metalwork)) (Pressure)

VOLKOVITSKIY, G.I., dotsent, kand. tekhn. nauk; PISECHIKOV, G.P., inzh.;
YUFEROV, V.M., dotsent, kand. tekhn. nauk; DZYUBA, M.I., inzh.;
SAY, N.F., inzh.; Prinimali uchastiye: SURZHIKOV, V.A., inzh.;
KOVALEVA, A.D., inzh.; TKACHENKO, A.V., inzh.; KIRVALIDZE, H.S.,
inzh.; GLADKIKH, D.V., inzh.; YESAULOV, A.T., inzh.

Characteristics of producing large-diameter pipe of Kh18N12M2T
steel. Stal' 22 no.6:532-535 Je '62. (MIRA 16:7)

1. Yuzhnootrudnyy zavod (for Surzhikov, Kovaleva, Tkachenko,
Kirvalidze, Gladkikh, Yesaulov).
(Pipe, Steel) (Rolling(Metalwork))

ACCESSION NR: AR4041538

S/0137/64/000/004/DO41/DO42

SOURCE: Ref. zh. Metallurgiya, Abs. 4D248

AUTHOR: Ostrenko, V. Ya.; Yuferov, V. M.; Geyko, I. K.

TITLE: Mastering production of pipes from steel 12Kh6S2M

CITED SOURCE: Sb. Proiz-vo trub. Vy*p. 11. M., Metallurgizdat, 1963, 7-9

TOPIC TAGS: pipe, pipe production, rolling, heat treatment/12Kh6S2M steel

TRANSLATION: In the development of production technology of pipes from steel 12Kh6S2M there was investigated metal of pipe billets of composition (%): C, 0.12; Si, 1.53; Cr, 5.12; Mn, 0.38; Mo, 0.70; Nb, 0.25; Ni, 0.25; S, 0.014; P, 0.015. Billets had diameter 85 millimeters and length 900-1000 millimeters. Experiments for piercing were conducted on the laboratory piercing mill of the Ukrainian Scientific Research Institute of Pipes. Rolls of the mill had in pressing a diameter of 140 millimeters and angle of entrance and output cones of 3°30'. There were rolled test pieces of diameter 35 millimeters and length 90

Card 1/3

ACCESSION NR: AR4041538

millimeters. For comparison there were pierced also test pieces of Steel 10. During rolling they measured the load on the motor of the piercing mill and pressure of metal on the roller; temperature of heating was determined by a control piece with a thermocouple. During pressing in the 16% press, a cavity was uncovered at all rolling temperatures; with increase of temperature dimensions of the cavity decreased, which corresponded to results of twisting tests. During pressing, of 10%, openings of the cavity were not observed. Proceeding from given data, the temperature of piercing was selected within 1220-1250°. Rolling of pipes was produced on automatic installation 140 with a roller-type piercing mill. Before piercing, billets were heated in a Hoffmann kiln for 50-60 minutes. During piercing, adjustment of the piercing mill was the following: diameter of rollers 738 millimeters distance between rollers in narrowing: 76 millimeters, between straightedges: 83 millimeters; diameter of mandrel: 68 millimeters; advancement of blade of mandrel beyond narrowing: 37 millimeters; diameter of housing: 93 millimeters; thickness of wall of housing: 11 millimeters; pressing before blade of mandrel: 5.3%, calibration of rollers symmetric with angle of conicity: 3°30'. Load on mill motor 850-950 kilowatt. On automatic mill, housings were rolled in gauge of 88 millimeters applying mandrels 70 millimeters in diameter. During the first pass and 72 millimeter during the second pass. On the rolling mill pipes were rolled up to a diameter of 96 millimeters, after which they were

Card 2/3

ACCESSION NR: AR4041538

calibrated to finished dimension 89 x 8 millimeters and subjected to straightening. Investigation of branch connections cut from finished hot-rolled pipes showed that their metal had a martensite structure and was characterized by the following properties: σ_b , 143 kg/cm²; σ_s , 123.5 kg/cm²; δ , 6.5%, a_k , 9.3 kg/cm²; and hardness 302H_p. Intermediate heat treatments of pipes in the process of cold rolling consisted in annealing at a temperature of 760-780° which ensured removal of work hardening, preservation in the metal of the structure of granular perlite and restoration of mechanical properties. On the basis of conducted investigations there was developed the technology of production and prepared an experimental lot of boiler tubes of brand 12Kh6S2H steel.

SUB CODE: IE, MM

ENCL: 00

Card 3/3

VOLKOVITSKIY, G.I.; YUFEROV, V.M.; DZYUBA, M.I.; PISHCHIKOV, G.P.;
SAY, N.F.

Centrifugal casting of K1448 steel billets for large diameter
pipes. Lit. proizv. no.6:14-15 Je '63. (MIRA 16:7)

(Centrifugal casting)

KONOPLEV, B.A.; YUFEREV, V.M., kand. tekhn. nauk (Novosibirsk)

There is a possibility to increase the operative efficiency of track maintenance machinery. Put' i put. khoz. 7 no.11:15-17 '63.
(MIRA 16:12)

1. Nachal'nik otдела mekhanizatsii sluzhby puti, Novosibirsk, Zapadno-Sibirskoy dorogi (for Konoplev).

ACCESSION NR: AP4019481

S/0133/64/000/003/0258/0263

AUTHOR: Ostrenko, V. Ya.; Yufarov, V. M.; Gayko, I. K.; Ty*r, V. P.;
Osion, N. A.; Chererinskaya, R. I.; Vil'yams, O. S.; Lagutina, R. V.

TITLE: Manufacture of tubes from new ferritic martensitic heat
resistant steels

SOURCE: Stal', no. 3, 1964, 258-263

TOPIC TAGS: heat resistant steel, steel tube, ferritic martensitic
steel, tube rolling

ABSTRACT: The authors report on techniques developed in recent years
by the Ukrainskiy n.-i. trubnyy institut (Ukrainian Tube Research
Institute) in cooperation with tube factories in Pervoural'sk and
Nikopol for hot rolling and heat treating of tubes made from 9 new types
of steel, all of which contain 10—14% Cr and additions of V, Mo, Nb,
and W. The AC temperature was in the range of 810—830C; ferrite
grain growth was noted above 1100C; piercing temperatures varied from
1090 to 1200C. Ductility at high temperatures was found to depend on
the content of free ferrite, and piercing of tube billets presented no

Card 1/2

ACCESSION NR: AP4019481

difficulties at a content of 50%. At 15—20% ferrite hot tears, cracks, and laps were formed. Annealing of hot-rolled and reduced tubes at 770—780C imparts a structure of granular pearlite and the mechanical properties needed for further cold reduction. Metal consumption for almost all steels, including machining, proved no higher than those for similar pipes of stainless steels in current production practice. "Engineers N. S. Kirvalidze, R. A. Prudkova, N. N. Pil'nikova, L. S. Rakhnovetskiy, I. S. Pechennikova, and others took part in the work." Orig. art. has: 8 figures and 2 tables.

ASSOCIATION: Ukrainskiy n.-i. trubnyy institut (Ukrainian Tube Research Institute); Pervoural'skiy novotrubnyy zavod (Pervoural'sk New Tube Plant); Nikopol'skiy yuzhnotrubnyy zavod (Nikopol' Southern Tube Plant)

SUBMITTED: 00

ATD PRESS: 3045

ENCL: 00

SUB. CODE: MM,IE

NO REF SOV: 010

OTHER: 000

Card 2/2

MOLOTKOV, L.P., dotsent, kand. tekhn. nauk; YUFEROV, V.M., dotsent, kand. tekhn. nauk; KUZNETSOV, M.P., inzh.; CHERNEVICH, Ye.M.; BORTUNOV, Ye.M.; SOROGHAN, N.G.; MADZHAR, P.I.

Ways of increasing the output of rolled products acceptable for their mechanical properties during the rolling of M16S, St.3M, and 15KhSND steel on universal mills. Stal' 24 no.9:824-827 S '64.

(MIRA 17:10)

L 61649-65 ENT(=)/EWA(d)/I/EWF(=)/EAF(R)/EAF(z)/L...

ACCESSION NR: AR5012848

UN/0137/

SOURCE: Ref. zh. Metallurgiya, Abs. 3D202

AUTHOR: Flyatskovskiy, O. A.; Yuzerov, V. M.; Pavlovskiy,
Lezinskaya, Ye. Ya.

TITLE: Production of tubes from EP27 steel

CITED SOURCE: Sb. Proiz-vo trub. Vyp. 13. M., Metallurgiya

TOPIC TAGS: metal tube, steel, temperature interval, hot
metal ductility, heat treatment, cold working/ EP27 steel

TRANSLATION: It has been established as the result of an
optimum temperature interval for the hot rolling of tubes of

Card 1/2

4 61699-65

ACCESSION FR: AR5012848

subsequent cooling in air. N. Yulina.

SUB CODE: MM

ENCL: 00

Card 2/2

(N)

L 1087-66 EWT:m)/Epi. - 1/1000 (t' 1000) 500

ACC HR: 1007

30: p. 2

ИЗДАНИЕ: Isaferov, V. M.; Chernitskaya, R. T.

103 103

FILE: Information industry marketing plan

... ..

THIS TABLE SHOWS: Austenitic steel, stainless steel,
Alloy steel, low alloy steel, steel austenite, austenitic
steel, austenitic steel.

[illegible]

Case 4

UDC 621.372.6

1. 001146

ACC 10 10 10 10

Rolling mill showed that as the reduction in area
martensite increases from 0.3 to 30% and the hardening
point, apparently, the temperature of the metal
martensite is formed with a further increase in rolling
above experiments, "warm" rolling is recommended for
the tubes should be preheated to 300-350C before rolling
or the mill rolls should be preheated. The rolling
orig. art. has 4 figures.

SUB CODE: 11, 13/ SUBM DATE: none/ ATD PRESS: 1.72

Card 2/2

PROCEDURE: Procedures employed in centrifugal casting of tubes with internal diameters of 160, 145 and 120 mm and 365 mm are described. The tubes were cast from log (Kh10N20T2 steel ($\leq 0.08\%$ C, $\leq 0.80\%$ Si, $\leq 0.01\%$ Ti, $\leq 0.60\%$ Al)). The cast tubes were then machined to 10-12 mm and internally to a tolerance of 20-25

Cord 1/2

L 56680-1

ACCESSION NR: AP5013787

a primarily columnar structure. The mechanical properties of the tubes were as follows: $\sigma_{0.2} = 440$ MPa, $\sigma_{0.01} = 540$ MPa, $\sigma_{0.001} = 640$ MPa. It is determined that the cost of tubes prepared by this method is 1.5 times that of those prepared from forged blanks.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

NO REF SOV: 003

OTHER: 000

Card 2/2

1. $\frac{d}{dt} \left(\frac{1}{2} m v^2 \right) = \frac{1}{2} m \frac{d}{dt} (v^2) = \frac{1}{2} m \frac{d}{dt} (v_x^2 + v_y^2 + v_z^2)$

ACCESSION NR: AF5002974

S/0123, . . .

AUTHOR: Plyatshevskiy, G. A. (Doctor of technical sci-
ence of technical sciences); Gaydarovskiy, I. G. (En-
gineer); Iskakov, I. I. (Engineer); Vovsine, A. D. (En-
gineer); Kapustin, I. B. (Engineer); Kukarskiy,
TITLE: Mastering the production of IM-15N8532 at

Source: Steel, Vol. 1, 1965, 49-52

TOPIC TAGS: steel pipe, pipe rolling, austenite steel, steel, stainless steel pipe, steel phase transformation

ABSTRACT: Phase transformations of austenite into martensite steel during cold deformation has been taken into account in the technology of hot-and cold-rolled pipes. The martensite transformation of this steel lies around 150C and the range of austenite to austenite is between 500 and 700C. Mass production of steel pipe is quite possible if the raw material is free of nitrides and carbides. The above steel type (EP301) having a lower Cr content substituted by 3% Al. It shows

Card 1/2

1. ORIGIN: AF0002974 /

that: that its ductility changes during hot deformation and stable austenite into martensite takes place during cold deformation. Rolling of forged 90 mm diameter billets are described. Accumulations of nitrides were observed. Cut-out samples were strength tests at various temperatures and the content of the phase was determined. On the basis of these tests, the following recommended: first passes of cold rolling are to be done at least treated at 1150-1200C. This steel has a tendency to be brittle by cold working and heat treatment later removes this hardening. Despite martensite formation, cold rolling was satisfactory and drawing was also satisfactory except for cracks. There is accumulation of nitride impurities. "Dr. V. S. Sushkov and co. in the work." Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: UNIT1: Novotrubnyy zashod ("Novotrubnyy" plat.)

EXCLUDED: 00

ENCL: 00

NO REP SENT: 000

OTHER: 000

0002/2

MUSIN, M.Kh.; YUFEROV, Yu.K.

Combined geological section of the middle Devonian and the
lowest part of the upper Devonian in western Bashkiria. Dokl.
AN SSSR 134 no.2:415-418 S '60. (MIRA 13:9)

1. Ufimskiy neftyanoy nauchno-issledovatel'skiy institut.
Predstavleno akademikom D.V.Haliykinym.
(Bashkiria--Geology, Stratigraphic)

MUSIN, M.Kh.; KLYUCHAREV, V.S.; YUFEROV, Yu.K.

Geology of the terrigenous Devonian formation of the Belebey-Aksakovo section of Bashkiria. Izv.vys.ucheb.zav.; geol.i razv. 5 no.3:32-43 Mr '62. (MIRA 15:4)

1. Ufimskiy nauchno-issledovatel'skiy institut.
(Bashkiria—Petroleum geology)

AKOPYAN, S.G.; BAZEV, N.S.; DEMINA, A.V.; SHAYEVSKIY, Yu.I.; YUFEROV, Yu.K.

Development of the layer D₁ in the Shkapovo oil field.

Nefteprom. delo no.6:3-8 163.

(MIRA 16:10)

1. Neftepererabatyvayushcheye upravleniye "Aksakovneft'."
(Shkapovo region—Petroleum production)

SHAYEVSKIY, Yu.I.; YUFEROV, Yu.K.

Present status of the development of the Shkapovo oil field.
Geol. nef'ti i gaza 7 no.10:14-21 0 '63. (MIRA 17:10)

1. Neftepromyslovoye upravleniye Aksakovneft'.

MUSIN, M.Kh.; OVANESOV, M.G.; YUEEROV, Yu.K.

Oil potential of the limestones of the Biya horizon in the Shkapovo field and their prospects in the adjacent territories of Bashkiria and Orenburg Province. Neftgaz.geol.i geofiz. no.9:43-46 '63.

(MIRA 17:3)

1. Ufimskiy neftyanoy nauchno-issledovatel'skiy institut i Nefto-promyslovoye upravleniye "Aksakovneft".

MUSIN, M. Kh.; YUPEROV, Yu. K.

Division and correlation of the Middle Devonian and lower
Frasnian sediments in western and southwestern Bashkiria.
Sov. geol. 7 no.6:134-139 Je '64 (MIRA 18:1)

YUFEROVA, A.I.

NOGILEVSEVA, N.A., kandidat sel'skokhozyaystvennykh nauk; ZHUKOVA, V.K.,
kandidat tekhnicheskikh nauk; AZHTEV, K.G.; YUFEROVA, A.I.

Harvesting spring wheat in separate stages. Zemledolie 5 no.8:58-63
Ag 157. (MLRA 10:9)

(Wheat--Harvesting)

AP6000039

express their sincere gratitude to associates of VINITI V. A. Polushkin, I. I. A. I. Rozanov, and K. A. Razlogova, and associates of NIIANI V. I. Yel. N. Anasheva, M. A. Bushlakova, and N. I. Lysenko for assistance in organizing the work of the information-request department and for suggestions and valuable advice. Orig. aut. has 2 figs.

5. 0. 1. 8. 3M DATE: 96Mar95

YUFEROVA, YE. K.

YUFEROVA, YE. K.: "Problems of Optimum Geometry and Procedure for Design of Electromagnetic Friction Clutches." Min of Higher Education USSR, Moscow Order of Lenin Power Institute V. M. Molotov, Moscow, 1955 (Dissertations for Degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis' No. 26, June 1955, Moscow

S/068/63/000/003/001/003
E071/E136

AUTHORS: Garber, Yu.N., and Yuferova, N.A.

TITLE: The absorptive capacity of oils used for the absorption of benzole hydrocarbons

PERIODICAL: Koks i khimiya, no.3, 1963, 35-37

TEXT: A method of evaluating the absorptive capacity of oils used for the absorption of benzole hydrocarbons in the coking industry is proposed. The amount of benzene adsorbed per hour at a difference of its partial pressure of 1 mm, is taken as a criterion of the absorptive capacity. Thus the amount of absorbed benzene is related to the whole contact area of a standard laboratory absorber. This criterion is supplemented by the amount of the oil's fraction distilling up to 230 °C. The determination is done by passing a known volume of purified coke oven gas, to which a known volume of gaseous benzene is added, through a laboratory absorber filled with the oil investigated. The absorbed benzene is distilled off using a standard laboratory rectification column, weighed and recalculated for a difference of partial pressures of 1 mm. The formula used is

$$A = Q/\Delta P_{\text{mean}}$$

Card 1/2

The absorptive capacity of oils ...

S/068/63/000/003/001/003
E071/E136

where: A - absorption capacity of oil, g.hr/mm; Q - the amount of absorbed benzene, g/hr; Δp_{mean} - mean logarithmic difference of partial pressures, mm Hg;

$$\Delta p_{\text{mean}} = \frac{\Delta p_1 - \Delta p_2}{2.303 \log \frac{\Delta p_1}{p_2}}; \text{ where } \Delta p_1 = p_1 - p'_1;$$

$\Delta p_2 = p_2 - p'_2$; where: p_1 - partial pressure of benzene in the gas entering the absorber; p_2 - the same, leaving the absorber; p'_1 - vapour pressure of benzene vapour over oil leaving the absorber; p'_2 - the same entering the absorber. Experimental data determined by this method are given for a number of fresh and used oils. There are 1 figure and 2 tables.

ASSOCIATION: Kuznetskiy filial VUKhINA
(Kuznetsk Branch of VUKhIN)

Card 2/2

YU. P. ROVA, YE. K.

4.2)

NAME: NAME OF THE AUTHOR

Address: 100000 Moscow, U.S.S.R.

Electrical Engineering, Institute of Electrical Engineering, Russian Academy of Sciences, Moscow, U.S.S.R. (Moscow, U.S.S.R.)

Abstract: This article is intended for engineers and technicians designing electrical apparatus and is concerned with electrical contact materials. It may also be useful to scientific research in electrical contact materials.

INTRODUCTION. This book contains reports delivered at the Electric Contacts Conference held in Moscow in November 1975. These papers cover physical processes occurring during contact, methods of designing and testing electrical contacts, contact materials, production and characteristics of contact materials. The book is intended for engineers and technicians in the field of electrical engineering and electrical contact materials. The book is intended for engineers and technicians in the field of electrical engineering and electrical contact materials. The book is intended for engineers and technicians in the field of electrical engineering and electrical contact materials.

1.1. PRODUCTION AND CHARACTERISTICS OF CONTACT MATERIALS. The author describes the production and characteristics of contact materials. The author describes the production and characteristics of contact materials. The author describes the production and characteristics of contact materials.

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897

S/103/60/021/008/008/014
B012/B063

AUTHOR: Yuferova, Ye. K. (Moscow)

TITLE: Elements of Digital Computers Based on the Principle of
Integration of Voltage Pulses

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 8,
pp. 1165-1172

TEXT: Reference is first made to circuits of semiconductor units based on the principle of integration of voltage pulses (Refs. 1 and 2). The mode of operation of these circuits is briefly explained. At present, two types of units are being developed, which are based on this principle. In the first type, a preset number of pulses is stored in an integrating core. After the end of integration, a signal is released at the output of the integrator. These units are used for frequency dividers, counters, etc. The second type is characterized by the fact that not more than three voltage pulses can reach the input of its integrating cores, and that there is a certain signal power at the output, according to the quantity stored. This type is used for the construction of summators. The circuit diagram of an

Card 1/3

Elements of Digital Computers Based on the
Principle of Integration of Voltage Pulses

S/103/60/021/008/008/014
B012/B063

integrator is reproduced in Fig. 2. Such a circuit diagram was first published in 1955 (Ref. 1). The mode of operation of this integrator is briefly explained. Figs. 3 and 4 illustrate two basic circuit diagrams of this integrator. At present, integrators with five and ten stored pulses are being developed. Advantages of the integrators under consideration are their high efficiency (concerning the number of units) and the lack of generators of strong displacement pulses. Disadvantages of these integrators are the increased requirements to be met in the sorting of triodes and the delay of the output signal with respect to the input signal. Next, the author explains the method of constructing summators based on the principle of integration of voltage pulses, which was published in 1958 (Ref. 3). Fig. 5 shows the main structural elements, i.e., the integrating magnetic element and the selective circuits. Two circuits - a four-cycle and a two-cycle summator - are studied (Figs. 9 and/or 10 and 11). These summators were tested satisfactorily. They showed a stable operation between -40°C and $+55^{\circ}\text{C}$ and also when the commutator voltage was changed within the range -20 - $+27$ per cent of the rated value. The small number of units is considered to be the main advantage of the above-described summators. There are 12 figures and 3 references: 1 Soviet and 1 US.

Card 2/3

Elements of Digital Computers Based on the
Principle of Integration of Voltage Pulses

S/103/60/021/008/008/014
B012/B063

SUBMITTED: November 24, 1959

Card 3/3

YUPPA, Ya.2.

Lathe attachment for cutting end-plate screw threads. Stan. i instr.
27 no. 11:30-31 H '56. (MIRA 10:1)
(Lathes--Attachments)

YUFIN, A.P., dots.

Using Venturi meters for measuring the flow of nonhomogeneous fluids
in pressure pipelines. Trudy NI no.7:34-39 '47. (MIRA 12:1)
(Hydraulics) (Water meters)

Applied Mechanics
Review

Hydraulics, ...

1/6

2308. A. P. Yufin, Motion of a heterogeneous liquid in horizontal non-aerated steel pipes (in Russian), *Izvestiya Vsesoyuznogo Nauchnogo Tsentra*, 1130-1132 (Aug. 1979).

Results are reported on experimental pumping of sand-water mixtures through a system of pipes connected in series and having diameters of 150, 200, 250, and 300 mm. Sands of five different grain sizes, ranging from 0.25 to 7.50 mm, were used. The data obtained agreed with those of O'Brien only at velocities higher than velocity which is critical in respect to settling out of particles. For lower velocities, a coefficient correcting conventionally computed gradient losses for difference between discharge density and actual density was determined as a function of pipe diameter, size of solid particles, consistency of mixture, and its average velocity. It is suggested that subcritical velocities may be more convenient for field use. Note typographical error on fig. 8: in lower left of diagram for d read D . This diagram summarizes results of supplementary tests on critical velocities.

(Gergory P. Tschelentsov, U.S.)

1950

Inst. Geography, AS USSR

YUFIN, A. P.

Technology

(Force-pump conveyance of water). (Moskva), Gosenergoizdat, 1951.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED

10(4)

Author: Sov/98-59-7-21/22
Title: Conference on Scientific Research in the Field of Hydromechanics
62-65 (USSR)

ABSTRACT:

Card 1/6

The article is a chronicle of the above-named conference, which was held in Moscow from April 18-19, 1959, on the initiative of the coordinating commission for hydromechanization in the Council for Hydromechanics of the Academy of Sciences of the USSR. The All-Union MESS Hydromechanization Trust, the Mining Institute of the Academy of Sciences of the USSR and the Moscow oblast board of the technological department of the construction of the commission were the main organizers of the conference. The conference was held in the USSR Ministry of State Construction of the USSR, Ministry of National Economics of the USSR and the union republics, the Academy of Agricultural Science and the USSR Academy of Sciences of the USSR and the Ukrainian SSR, the research institutes, and official scientific and research institutions. The conference was opened by Academician A.M. Tserpakov, and at the plenary session papers were read by the following: Prof. A.I. Zhukovskiy, Doctor of Technical Sciences; The State Scientific Research Center in the Field of Hydromechanics; The USSR Academy of Sciences; The Construction of All-Union MESS Hydromechanization Trust; Scientific Organization; Engineer N.A. Gorin, the present State of and the Outlook for Design and Research Work in the Field of Equipment for Hydromechanization; Engineer S.B. Torslunn; "Certain Problems of the Economy of the Hydromechanization of Earth Works", Prof. G.A. Muruk, Doctor of Technical Sciences; "The Present State of and the Outlook for the Development of the Hydromechanization of Equipment Containing", Engineer S.M. Shkumlin; "Research and Development of Hydromechanization in the Metallurgical Industry". The remainder of the conference was divided into 3 sessions on technical equipment and technology. At the session dealing with technology papers were read by the following: Prof. M.M. Kuznetsov, Doctor of Technical Sciences; "Certain Problems in the Planning of Alluvial Dams"; L.A. Ivanov, Candidate of Technical Sciences (USSR); "Peculiar Features of the Dilution and Compression of Sand Foundations"; P.D. Lebnor, Candidate of Technical Sciences (USSR); "Peculiar Features of the Construction of Sand Foundations"; V.A. Kuznetsov, Candidate of Technical Sciences (USSR); "The Consolidation of the Key Parts of Earth Dams"; M.I. Kolobachnikov, Candidate of Technical Sciences (USSR); "The Consolidation of the Key Parts of Earth Dams"; M.I. Kolobachnikov, Candidate of Technical Sciences (USSR); "Research on Alluvial Construction by Means of Cubic Foundations"; M.I. Kuznetsov, Candidate of Technical Sciences; "The Hydraulic Construction of Earthworks by Means of Loose Foundations"; P.A. Kulikov, Candidate of Technical Sciences (USSR); "The Sary-Jaynak dam on the Kuren River by Means of the Consolidation of Sand Foundations"; V.A. Kuznetsov, Candidate of Technical Sciences (USSR); "Research on the Morphological Features of Sand Foundations"; Engineer V.A. Shcherbakov, Candidate of Technical Sciences (USSR); "Formulas for the Determination of the Angle of Inclination of Sand Foundations"; M.V. Kozlov, Candidate of Technical Sciences; "Method of Calculating the Flowing Rate of Frozen Foundations on the Upper Slope of Sand Dams when Constructed in winter"; D.I. Kozlov, Candidate of Technical Sciences (USSR); "Research on the Consolidation of Sand Foundations without the Use of Heavy

Card 2/6

Card 3/6

BLIZNIYAK, Ye.V., otv.red. [deceased]; YUPIN, A.P., otv.red.; KUDASHEVA,
I.G., red.izd-va; ASTAF'YEVA, G.A., tekhn.red.

[Hydraulics of structures and dynamics of river channels]
Gidravlika sooruzhenii i dinamika rechnykh rusel. Moskva,
1959. 242 p. (MIRA 13:2)

1. Akademiya nauk SSSR. Sovet po problemam vodnogo khozyaystva.
(Hydraulic engineering)

SOV/180-59-3-38/43

AUTHORS: Spivakovskiy, A.O., Smoldyrev, A.Ye. and
Yufin, A.P. (Moscow) *Prof. A*

TITLE: Research Work in the Field of Mining Hydraulic and
Pneumatic Transport

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Metallurgiya i toplivo, 1959, Nr 3, pp 180-183 (USSR)

ABSTRACT: This is a brief review of the state of the utilisation
of hydraulic and pneumatic transport of mined minerals
in various countries and of the main directions of the
research work on the subject carried out by the
Institute IGD of the Academy of Sciences of the USSR.
Main points: 1) Analysis of technico-economic
efficiency of application of hydraulic transport and
the field of its application. It was established that
long range transportation of materials of a size above
6 - 3 mm is at present uneconomical. The field of
application of hydraulic transport of coal at distances
of 90 - 50 km is governed by conditions of wet
beneficiation or the removal of water from deposits.
2) Studies of basic hydraulic and kinematic characteristics
of streams of hydromixtures (the relative velocities of

Card 1/2

**Dr. Tech. Sci.*

SOV/180-59-3-38/43

Research Work in the Field of Mining Hydraulic and Pneumatic Transport

movement of particles, starting, free and inhibited fall etc). 3) Investigations of hydraulic transport of coal and other minerals in horizontal and vertical pipes of a small and large (400 mm) diameter. 4) Development of methods of designing hydraulic transport on the basis of a single semiempirical theory. 5) Investigation of the pulsation characteristics of a stream of hydromixtures. 6) Development of control and measuring apparatus for research and industrial purposes. 7) Investigation of hydrotransport of minerals under industrial conditions (investigations were carried out in the Donets basin, some experimental work was carried out on the determination of parameters of hydraulic transport of ores of 0.3 - 0.4 m in size). 8) Development of some new types of small scale pneumatic installations (in the Kuznetsk basin). In the appendix some apparatus and installations are briefly outlined and illustrated. There are 3 figures.

Card 2/2

YUPIN, A.P., prof.

All-Union conference on the hydraulic transportation of coal by
pipelines. 'Ugol' 34 no.2:64 F '59. (MIRA 12:4)
(Hydraulic mining)

PHASE I BOOK EXPLOITATION SOV/5354

Zhurin, Vladimir Dmitriyevich, Professor, Doctor of Technical Sciences,
and Andrey Pavlovich Yufin, Professor, Doctor of Technical Sciences

Oborudovaniye gidromekhanizatsii (Hydromechanization Equipment) Mos-
cow, Gosstroyizdat, 1960. 298 p. 4,000 copies printed.

Ed. of Publishing House: N. M. Borshchevskaya; Tech. Ed.: P. G. Gilenson.

PURPOSE: This textbook has been approved for hydraulic engineering divi-
sions of schools of higher education by the Ministry of Higher and Special
Secondary Education USSR. It may also be useful to technical personnel
engaged in designing, constructing, or operating hydromechanization eq-
ment.

COVERAGE: The book is based on the course "Hydraulic Mechanization
Equipment" adopted by the MISI imeni V. V. Kuybysheva (Moscow "Order

Card 1/13

Hydromechanization Equipment

SOV/5354

of the Red Banner of Labor" Construction Engineering Institute imeni V. V. Kuybyshev). The following topics are discussed: Soviet and non-Soviet mechanisms and equipment for handling various soils by hydraulic and semihydraulic methods and for hydraulic transportation and hydraulic fill of earth structures; characteristics of up-to-date equipment; the more widely used methods of calculation; and methods of improving existing machinery and developing new equipment. The authors thank F. M. Dolgachev, Candidate of Technical Sciences, who wrote Ch. XI, and M. K. Liyts, Engineer. There are 10 references, all Soviet.

TABLE OF CONTENTS:

Foreword

3

Card 2/13

ZVONKOV, V.V., otv. red.; ZHELEZNYAKOV, G.V., doktor tekhn. nauk, red.;
YUFIN, A.P., doktor tekhn. nauk, red.; CHERNOSKUTOV, K.A., red.;
DOBYSHYEV, Yu.G., red. izd-va; DOROKHINA, I.N., tekhn. red.

[New methods for measurements and instruments for hydraulic surveys]
Novye metody izmerenii i pribory dlia gidravlicheskikh issledovani. (MIRA 14:11)
Moskva, 1961. 287 p.

1. Akademiya nauk SSSR. Sovet po problemam vodnogo khozyaystva.
2. Moskovskiy institut inzhnerov vodnogo khozyaystva im V.R.Vil'yansa
(for Zheleznyakov).
(Hydrodynamics) (Measuring instruments)

SPIVAKOVSKIY, Aleksandr Onisimovich; MUCHNIK, Vladimir Semenovich, doktor tekhn. nauk; YUPIN, Andrey Pavlovich, doktor tekhn. nauk; SMOLDYREV, Anatoliy Yevtikheych, kand. tekhn. nauk; OFENGENDEN, Naum Yefimovich, kand. tekhn. nauk; BORISENKO, Lev Dmitriyevich, kand. tekhn. nauk; TRAYNIS, Viulen Vladimirovich, kand. tekhn. nauk; Primali uchastiye: KURBATOV, A.K., inzh.; MARKOV, Yu.A., inzh.; KORSHUNOV, A.P., inzh.; EKHER, B.Ya., otv. red.; KOVAL', I.V., red.izd-va; IL'INSKAYA, G.M., tekhn. red.

[Hydraulic and pneumatic transportation in mining enterprises]Gidravlicheskiy i pnevmaticheskiy transport na gornyykh predpriyatiyakh. Moskva, Gosgortekhzdat, 1962. 250 p. (MIRA 16:3)

1. Chlen-korrespondent Akademii nauk SSSR (for Spivakovskiy).
2. Institut gornogo dela im. A.A.Skochinskogo (for Smoldyrev).
3. Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut po gidrodobyche uglya (for Muchnik).
4. Donetskii nauchno-issledovatel'skiy ugol'nyy institut (for Ofengenden).
5. Moskovskiy inzhenerno-stroitel'nyy institut im. V.V.Kuybysheva (for Yufin).

(Pneumatic conveying) (Hydraulic conveying)

KUL'MACH, Pavel Petrovich; YUPIN, A.P., doktor tekhn. nauk, prof.,
otv. red.; ORPIK, S.L., red. izd-va; UL'YANOVA, O.G., tekhn.red.

[Hydrodynamics of hydraulic structures]Gidrodinamika gidrotekh-
nicheskikh sooruzhenii; osnovnye ploskie zadachi. Moskva, Izd-
vo Akad. nauk SSSR, 1963. 189 p. (MIRA 16:2)
(Hydraulic structures)

YUPIN, A.P., red.; GUTOVSKIY, V.N., red.; BAREKYAN, A.Sh., red.;
FRIDKIN, L.M., tekhn. red.

[Motion of alluvium and hydraulic transport] Dvizhenie na-
nosov i gidravlicheskii transport. Moskva, Gosenergoizdat,
1963. 197 p. (MIRA 16:7)
(Slit) (Hydraulic conveying)

YUFIN, Andrey Pavlovich, prof., doktor tekhn.nauk; BOGOMOLOV,
A.I., prof., doktor tekhn.nauk, retsenzent; TEPILOV, V.A.,
doktor tekhn.nauk, prof., retsenzent; SAMSONOVA, M.T.,
red.

[Hydraulics, hydraulic machinery and hydraulic drive] Gidravlika,
gidravlicheskie mashiny i gidroprivod. Moskva, Vysshaya shkola,
1965. 426 p. (MIRA 18:12)

YEFIN, Andrey Pavlovich. Prinimali uchastiye: CHERNOSKUTOV, K.A. inzh.;

ZHIVOTOVSKIY, L.S., dots., kand. tekhn. nauk; GOLIK, S.A.,

dots., kand. tekhn. nauk; DOLGACHEV, F.K., dots., kand.

tekhn. nauk; FILIMONOVA, I.V., kand. tekhn. nauk; MALININ,

S.V., dots., kand. tekhn. nauk; TAYAN, S.V., dots., kand.

tekhn. nauk; YEFIN, A.P., dots., kand.

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BERNSHTEYN, R.I., inzh.; VALYUZHINICH, V.Ia., inzh.; GDALIN, A.D.,
inzh.; GGLOVEO, V.A., inzh.; GOLUSEVA, N.V., inzh.;
GUREVICH, V.G., inzh.; KEROVIN, N.I., inzh.; KURDOV, V.G.,
inzh.; LEPMAN, I.M., inzh.; MITRYASHIN, M.I., inzh.;
OGANESOV, N.G., inzh.; OKUNEV, N.A., inzh.; TURZHITSKIY,
V.I., inzh.; YUFIT, B.P., inzh.; SHEL'VAKH, V.F., inzh.

[Manual on the quarrying and processing of rock building
materials] Spravochnik po dobyche i pererabotke nerudnykh
stroitel'nykh materialov. Leningrad, Stroiizdat, 1965.
520 p. (MIRA 18:2)

1. Vsesoyuznyy gosudarstvennyy institut po proyektam i
nauchno-issledovatel'skim rabotam promyshlennosti nerud-
nykh stroitel'nykh materialov.

YUFIN, V. A.

YUFIN, V. A. -- "Investigation of the Process of Mixing followed by Pumping of Petroleum Products along Trunk Pipelines." Min Higher Education USSR. Moscow Order of Labor Red Banner Petroleum Institute of Petroleum and Gas. Moscow, 1956.
(Dissertation for the Degree of Candidate in Technical Sciences).

SO: Knizhnaya Letopis', No 9, 1956

YABLONSKIY, V.S.; YUFIN, V.A.

Use of radioactive isotopes for controlling step-by-step pumping
of petroleum products through pipelines. Neft.khoz.33 [1.e.34]
no.9:56-61 S '56. (MIRA 9:10)
(Petroleum--Pipelines) (Radiosotopes--Industrial applications)

YURIN, V. A.

~~YURIN, V. A.~~

Mixing during successive pumping of petroleum and petroleum products
through pipelines. Neft. khoz. 35 no.8:54-62 Ag '57. (MIRA 10:11)
(Petroleum--Pipelines)

11(0)

SOV/93-58-10-13/19

AUTHOR: Nikolayev, V.V., Sushchenko, Ye.G., ~~Yufin, V.A.~~, and Yakunin, V.V.

TITLE: Radioactive Densimeter for Gravity Control on Pipelines Simultaneously Carrying Various Batches of Petroleum Products (Radioaktivnyy plotnomer dlya izmereniya plotnosti nefteproduktov v truboprovodakh pri posledovatel'noy perekachke)

PERIODICAL: Neftyanoye khozyaystvo, 1958³⁶, Nr 10, pp 58-62 (USSR)

ABSTRACT: Radioactive densimeters for measuring the gravity of the various petroleum products simultaneously carried by pipelines have already been designed in the United States [Ref 1] and in the Soviet Union. The GP-1 densimeter, designed by the VNIINP Institute and described in the literature [Ref 2], had a number of defects which were eliminated in the PZhR-2 densimeter (Fig. 1) designed by the NII Teplopribor. The PZhR-2 Model consists of a radioactive source mounted on a disc and rotated by a synchronous motor. The gamma rays from the source alternately pass through the test fluid and the compensating wedge and hit a scintillation counter. The electric impulses emerging in the counter are summed up on the integration cell from which a sinusoidal signal of unbalance is obtained. The signal of unbalance is amplified by an amplifier and with the aid of a phase-sensitive

Card 1/2

SOV/93-58-10-13/19

Radioactive Densimeter for Gravity Control (Cont.)

instrument rotates a reversible motor which shifts the compensating wedge until the streams of radioactive rays passing through the test fluid and the compensating wedge are balanced. The compensating wedge is shifted simultaneously with the core of the induction coil which masters the telemetric system of the secondary instrument. The distance the compensating wedge is moved from the neutral position is directly proportional to the variation in the density of the petroleum product. (Fig. 2) shows how a PZhR-2 densimeter is employed on a pipeline of 150 mm in diameter carrying three different petroleum products. In this case the data were recorded by an EPID-03 type secondary instrument, but when it is necessary to record the change in density with respect to time the EPID-03 unit must be replaced by a DSR instrument. A record of change in density with respect to time is shown by (Fig. 3) and the percentage of error is given in (Table 1). The authors conclude that the PZhR-2 densimeter operates within an accuracy of 0.5 percent (0.005 g/cu cm) and that the accuracy can be improved further by stabilizing the intensity of the electric feed. The PZhR-2 unit can be employed on pipelines of 100-500 mm in diameter. It will be produced serially in 1959. There are 3 figures, 1 table, and 2 references, 1 of which is Soviet and 1 English.

Card 2/2

YABLINSKIY, Ysevolod Sergeyevich; YUPIN, Ysevolod Aleksandrovich;
BUDAROV, Ivan Prokof'yevich; RASTOVA, G.Y., vedushchiy red.;
MUKHINA, E.A., tekhn.red.

[Consecutive pipelining of petroleum products and petroleum]
Posledovatel'naya perekachka nefteproduktov i neftei po magi-
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(Pipelines)